

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method to allocate bandwidth to connections of a network, which method is implemented at a central controller of an ad-hoc network, comprising:

allocating, at the central controller, a fixed amount of bandwidth to a QoS connection, the QoS connection requiring a certain quality of service (QoS), wherein an operator of said QoS connection is a requesting terminal which is a terminal of said ad-hoc network, and the fixed amount of bandwidth is independent from an actual needed amount of bandwidth;

freeing, at the central controller, a certain amount of the allocated fixed amount of bandwidth as freed bandwidth after receiving a resource request from the operator of said QoS connection indicating the actual needed amount of bandwidth, wherein the actual needed amount of bandwidth does not exceed said fixed amount of bandwidth and said freed bandwidth is a difference between the allocated fixed amount of bandwidth and the actual needed amount of bandwidth;

allocating said freed bandwidth to a non-QoS connection;

when said operator of the QoS connection transmits a request for a new needed amount of bandwidth greater than said needed amount of bandwidth, the new needed amount of bandwidth not exceeding said fixed amount of bandwidth, immediately returning as much of the freed bandwidth as required so that said new needed amount of bandwidth is available to said operator of the QoS connection;

determining, in the requesting terminal, a filling status of a transmit queue which indicates how much sending data is in the transmit queue,

determining, in the requesting terminal, said actual needed amount of bandwidth as bandwidth needed in a next transmission frame, the actual needed amount of bandwidth

depending on the filling status of the transmit queue and not exceeding said fixed amount of bandwidth, and

transmitting, from the requesting terminal, said actual needed amount of bandwidth to said central controller with a current transmission frame.

2. (Previously Presented) The method according to claim 1, further comprising:  
allocating some or all of said freed bandwidth to another connection of the ad-hoc network, the another connection being a connection without a fixed amount of allocated bandwidth.

3. (Canceled).

4. (Previously Presented) A method to reserve bandwidth for a connection of an ad-hoc network, which method is implemented at a requesting terminal of said ad-hoc network, wherein the requesting terminal or a central controller comprises a transmit queue for buffering sending data, and the requesting terminal is a terminal of the ad-hoc network with said central controller, the method comprising:

reserving, at the requesting terminal, a fixed amount of bandwidth to be provided to a QoS connection, the QoS connection requiring a certain quality of service (QoS);

determining, at the requesting terminal, a filling status of the transmit queue which indicates how much sending data is in the transmit queue;

freeing, at the controller, a certain amount of the reserved fixed amount of bandwidth as freed bandwidth, after receiving a resource request from the requesting terminal indicating the actual needed amount of bandwidth, wherein the actual needed amount of bandwidth does not exceed said fixed amount of bandwidth and said actual needed amount of bandwidth is

determined at the requesting terminal based on the filling status of the transmit queue, said freed bandwidth being a difference between the reserved fixed amount of bandwidth and the actual needed amount of bandwidth;

reserving said freed bandwidth to be provided to a non-QoS connection;

determining, at the requesting terminal, a new needed amount of bandwidth which is needed in a next transmission frame for the QoS connection, the new needed amount of bandwidth being greater than said needed amount of bandwidth, depending on the filling status of the transmit queue, and not exceeding said fixed amount of bandwidth;

transmitting, from the requesting terminal, a request for said new needed amount of bandwidth to said central controller for the QoS connection with a current transmission frame; and

immediately returning, to the requesting terminal, as much of the freed bandwidth as required so that said new needed amount of bandwidth is available to said requesting terminal for the QoS connection.

5. (Previously Presented) The method according to claim 4, further comprising:

operating said central controller by allocating a fixed amount of bandwidth to a certain connection requiring a certain quality of service, wherein an operator of said certain connection is a requesting terminal which is a terminal of said ad-hoc network,

freeing a certain amount of the allocated fixed amount of bandwidth as freed bandwidth, said freed bandwidth being the difference of said fixed amount of bandwidth and a needed amount of bandwidth indicated by said operator, and

in case said operator requests a re-allocation of at least parts of the freed bandwidth, immediately re-allocating as much of the freed bandwidth as required so that said needed amount of bandwidth is available to said operator.

6. (Previously Presented) The method according claim 1, wherein  
said ad-hoc network is an ad hoc network operated according to the European  
Telecommunications Standard Institute High Performance Radio Local Area Networks/2  
(ETSI HIPERLAN/2) standard.

7. (Currently Amended) A central ~~controller~~ network device of an ad-hoc network,  
comprising:

a controller configured to

~~a QoS bandwidth allocation means for allocating~~ allocate a fixed amount of  
bandwidth to a QoS connection, the QoS connection requiring a certain quality of service  
(QoS), and a requesting terminal being an operator of said QoS connection[[;]],

~~a bandwidth freeing means for receiving~~ receive a request signal sent out by  
said operator of said QoS connection indicating an actual needed amount of bandwidth and  
when a certain amount of bandwidth neither exceeds the allocated fixed amount of bandwidth  
nor said needed amount of bandwidth, ~~freeing~~ free the certain amount of bandwidth which is  
a difference between the allocated fixed amount of bandwidth and said needed amount of  
bandwidth, wherein the actual needed amount of bandwidth is determined at the requesting  
terminal and transmitted to the central ~~controller~~; network device,

~~a non-QoS allocating means for allocating~~ allocate said freed bandwidth to a  
non-QoS connection[[;]],

~~a request receiving means to receive~~ a request for a new needed amount of  
bandwidth, needed in a next transmission frame, greater than said needed amount of  
bandwidth from said operator of said QoS connection with a current transmission frame, the  
new needed amount of bandwidth not exceeding said fixed amount of bandwidth<sub>1</sub>[[;]] and

~~a bandwidth returning means for~~ immediately ~~returning~~ return as much of said freed certain amount of bandwidth as required so that said new needed amount of bandwidth according to said request signal is available to said operator of said QoS connection.

8. (Currently Amended) The central ~~controller~~ network device according to claim 7, ~~comprising wherein~~

the controller includes a transmit queue for buffering sending data, and

the controller is configured to monitor ~~a monitoring means for monitoring~~ a filling status of said transmit queue and ~~indicating~~ indicate said needed amount of bandwidth, which depends on the filling status of the transmit queue, ~~to said bandwidth freeing means or to said bandwidth re-allocation means.~~

9. (Currently Amended) The central ~~controller~~ network device according to claim 7, wherein

said ad-hoc network is operated according to the European Telecommunications Standard Institute High Performance Radio Local Area Networks/2 (ETSI HIPERLAN / 2) standard.

10. (Currently Amended) A requesting terminal of an ad-hoc network having a QoS connection with other terminals of the ad-hoc network or with a central controller of the ad-hoc network, the QoS connection requiring a certain quality of service (QOS) and a fixed allocated amount of bandwidth, the requesting terminal comprising:

a transmit queue for buffering sending data[[]], wherein

the requesting terminal is configured to

~~a monitoring means for monitoring~~ monitor a filling status of said transmit queue and ~~sending~~ send out a request signal to said central controller indicating an actual needed amount of bandwidth, which depends on the filling status of said transmit queue, the actual needed amount of bandwidth being determined at the requesting terminal and not exceeding the fixed allocated amount of bandwidth,

determine a new needed amount of bandwidth for the QoS connection which is needed based on a filling status of a next transmit queue as bandwidth needed in a next transmission frame, the new needed amount of bandwidth being greater than said actual needed amount of bandwidth, and not exceeding said fixed allocated amount of bandwidth, and

transmit a request for said new needed amount of bandwidth to said central controller with a current transmit frame; and wherein

the central controller is configured to

~~freed~~ free a certain amount of [[the]] reserved fixed amount of bandwidth as freed bandwidth, said freed bandwidth being a difference between the fixed allocated amount of bandwidth and the actual needed amount of bandwidth,

~~the controller reserves~~ free said freed bandwidth to a non-QoS connection; ~~and the requesting terminal further includes, and~~

~~a determining means for determining a new needed amount of bandwidth for the QoS connection which is needed based on a filling status of a next transmit queue as bandwidth needed in a next transmission frame, the new needed amount of bandwidth being greater than said needed amount of bandwidth, and not exceeding said fixed amount of bandwidth, and~~

~~a transmitting means for transmitting a request for said new needed amount of bandwidth to said central controller with a current transmit frame, wherein~~

~~said controller~~ immediately ~~returns~~ return, to the requesting terminal, as much of the freed bandwidth as required so that said new needed amount of bandwidth is available to said requesting terminal for said QoS connection.

11. (Previously Presented) The requesting terminal according to claim 10, wherein said ad-hoc network is operated according to the European Telecommunications Standard Institute High Performance Radio Local Area Networks/2 (ETSI HIPERLAN /2) standard.

12. (Previously Presented) The method according to claim 4, wherein said ad-hoc network is operated according to the European Telecommunications Standard Institute High Performance Radio Local Area Networks/2 (ETSI HIPERLAN / 2) standard.

13-14. (Canceled)

15. (Currently Amended) The method according to claim 1 or 2, wherein the freed bandwidth is re-allocated in [[a]] the next transmission frame.

16. (Previously Presented) The method according to claim 5, further comprising:  
allocating some or all of said freed bandwidth to another connection of the ad-hoc network, the another connection being a connection without a fixed amount of allocated bandwidth.

17. (Currently Amended) The central network device controller of an ad-hoc network according to claim 7, wherein

the certain amount of bandwidth is allocated to another connection of the ad-hoc network, the another connection being a connection without a fixed amount of allocated bandwidth.

18. (Currently Amended) The method according to claim 1, wherein [[the]] determining said actual needed amount of bandwidth as bandwidth needed in [[a]] the next transmission frame includes determining said actual needed amount of bandwidth based only on the filling status of the transmit queue.

19. (Currently Amended) The method according to claim 4, wherein [[the]] determining said new needed amount of bandwidth as bandwidth needed in [[a]] the next transmission frame includes determining said new needed amount of bandwidth based only on the filling status of the transmit queue.

20. (Currently Amended) The central ~~controller~~ network device according to claim 7, wherein the new needed amount of bandwidth is determined at the requesting terminal based only on the filling status of the transmit queue.

21. (Currently Amended) The requesting terminal according to claim 10, wherein the ~~determining means determines~~ requesting terminal is configured to determine the new needed amount of bandwidth based only on the filling status of the transmit queue.



22. (Currently Amended) A method to allocate bandwidth to connections of a network, which method is implemented at a central controller of an ad-hoc network, comprising:

allocating, at the central controller, a fixed amount of bandwidth to a ~~video~~ QoS connection, the ~~video~~ QoS connection requiring a certain quality of service (QoS), wherein an operator of said ~~video~~ QoS connection is a requesting terminal which is a terminal of said ad-hoc network, and the fixed amount of bandwidth is independent from an actual needed amount of bandwidth;

freeing, at the central controller, a certain amount of the allocated fixed amount of bandwidth as freed bandwidth after receiving a resource request from the operator of said ~~video~~ QoS connection indicating the actual needed amount of bandwidth, wherein the actual needed amount of bandwidth does not exceed said fixed amount of bandwidth and said freed bandwidth is a difference between the allocated fixed amount of bandwidth and the actual needed amount of bandwidth;

allocating said freed bandwidth to a non-QoS connection; and

when said operator of the ~~video~~ QoS connection transmits a request for a new needed amount of bandwidth greater than said needed amount of bandwidth, the new needed amount of bandwidth not exceeding said fixed amount of bandwidth, immediately returning as much of the freed bandwidth as required so that said new needed amount of bandwidth is available to said operator of the video QoS connection.

23. (New) The method according to claim 22, wherein  
the QoS connection is a video QoS connection.